

CLAIMS

1. A method for communication between electronic devices in a communication system comprising an accessor device connected to an accessor total access port, a target device connected to a target total access port, and a total access link between the accessor total access port and the target total access port, the method comprising:

converting user actions into electronic data using the accessor device, wherein the accessor device is a human user interface device;

sending the electronic data from the accessor device to the accessor total access port;

translating the electronic data sent from the accessor device from a device-dependent form into a device-independent form containing a user-functional representation of the electronic data sent from the accessor device;

transmitting the translated device-independent data over the total access link from the accessor total access port to the target total access port;

translating the transmitted data into a device-dependent form specific to the target device; and

sending the translated device-dependent data from the target total access port to the target device.

2. The method of claim 1 wherein the total access link comprises an information link ^a chosen from the group consisting of

an infrared link, an electronic cable link, a computer network link, a fiber optic link, and a radio frequency link.

3. The method of claim 1 wherein the total access link comprises a bi-directional serial transmission link with error-handling, error-correction, handshaking, data packing, and data unpacking.

4. The method of claim 1 wherein the transmitting comprises creating a generic data packet chosen from the group consisting of a keyboard packet, a mouse packet, a video packet, a target data packet, a control packet, and an accessor-to-accessor packet.

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5. The method of claim 1 wherein the accessor device is selected from the group consisting of a keyboard, a mouse, a track-ball, a joy-stick, a video monitor, a liquid-crystal display, an LED display, a speaker, a voice synthesizer, a speech recognition system, a remote control, a headband switch, a printer, a sound generator, Braille display, a tactile display, and a virtual reality display.

6. The method of claim 1 wherein the accessor device comprises a speech recognition and synthesis system and the accessor total access port comprises a sound and voice interface for facilitating the use of speech input.

7. The method of claim 1 wherein the target device comprises a personal computer, and the target total access port comprises a ROM containing communication resource information about the personal computer.

8. The method of claim 1 further comprising sending a radio frequency wake-up call from the accessor total access port to the target total access port.

9. An accessor total access port in a system comprising an accessor device connected to the accessor total access port, a target device connected to a target total access port, and a total access link between the accessor total access port and the target total access port, the accessor total access port comprising:

a microprocessor,

an accessor device interface between the microprocessor and the accessor device for communicating device-dependent electronic data between the accessor device and the microprocessor;

a memory means containing data about the accessor device and instruction code comprising instructions for the microprocessor to translate the device-dependent electronic data from the accessor device into device-dependent data containing a user-functional representation of the electronic data from the accessor device, wherein the data about the accessor device includes device-dependent accessor data, device-independent link

data, and user-functional descriptions; and

a communications interface between the microprocessor and the total access link for transmitting the device-independent data over the total access link to the target total access port.

10. The total access port of claim 9 wherein the communications interface comprises an infrared transceiver.

11. The total access port of claim 10 wherein the infrared transceiver transmits the universal data packet with error-handling, error-correction, handshaking, data packing, and data unpacking.

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12. The total access port of claim 9 wherein the microprocessor formats the device-independent data into a data packet chosen from the group consisting of a keyboard packet, a mouse packet, a video packet, a target data packet, a control packet, and an accessor-to-accessor packet.

13. The total access port of claim 9 wherein the accessor device comprises a speech recognition and synthesis system and the total access port comprises a sound and voice interface for facilitating the use of speech input.

14. A system for interfacing a human user with an electronic device, the system comprising:

an accessor device interfaced directly with the user;

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a first microprocessor connected to the accessor device and programmed to translate between a device-dependent data format associated with the accessor device and a device-independent data format, where the device-independent data format directly represents interactions of the user and the accessor device;

a second microprocessor connected to the electronic device and programmed to translate between device-independent data and a data format specific to the electronic device; and

a communication link connecting the first and second microprocessors, wherein the universal data packets are transmitted over the communication link from the first microprocessor to the second microprocessor.

15. A method for interfacing a human user with an electronic device, the method comprising:

receiving input signals from an input/output device customized to the human user, wherein the input signals comprise device-dependent codes;

translating with a first microprocessor the input signals into device-independent data representing user actions;

transmitting the device-independent data over a communications link from the first microprocessor to a second microprocessor;

translating with the second microprocessor the device-independent data into device-dependent data specific to the electronic device; and

sending the device-dependent data to the electronic device.

16. The method of claim 15 further comprising transmitting a description of input/output device resources over the communications link.

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